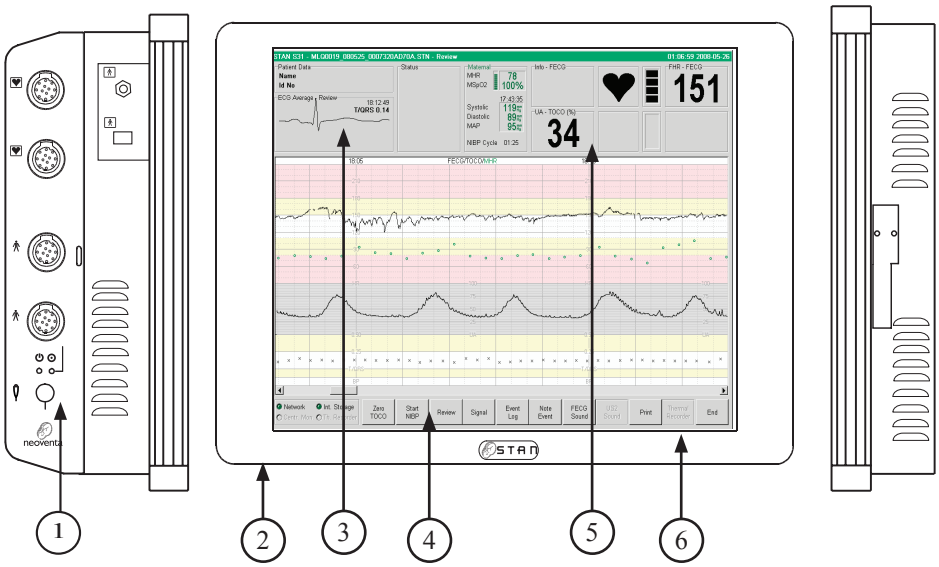
Quick Reference Guide
STAN S31 fetal heart monitor

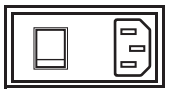
Important!

Read the STAN S31 User Manual.



1. Transducer connectors
2. Power switch
3. Fetal ECG (FECG) average
4. Function buttons
5. Information panel
6. Display unit

Power ON/OFF



Power on the monitor by setting the power switch beneath the display unit to position I.

Shut down the monitor by pressing the “End” function button on the screen. When instructed on the screen, power off the monitor by setting the power switch to position O.

Temporary ending

You can end the recording temporarily. If you restart the monitor within two hours, you will be able to continue the recording.

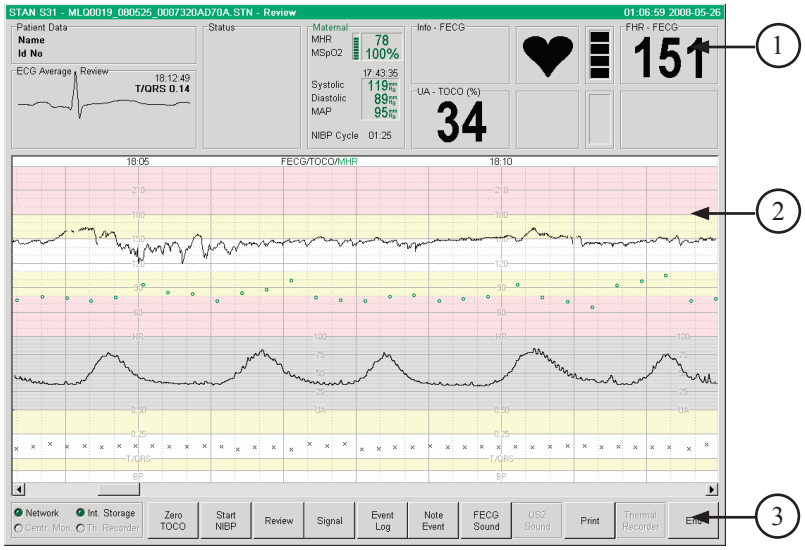
ST Analysis (Fetal ECG analysis)

In this document, this symbol indicates information related to ST Analysis function.

When monitoring with scalp electrode, the fetal ECG is recorded and ST Analysis is performed, if enabled on your monitor.

CE 0413

Screen layout

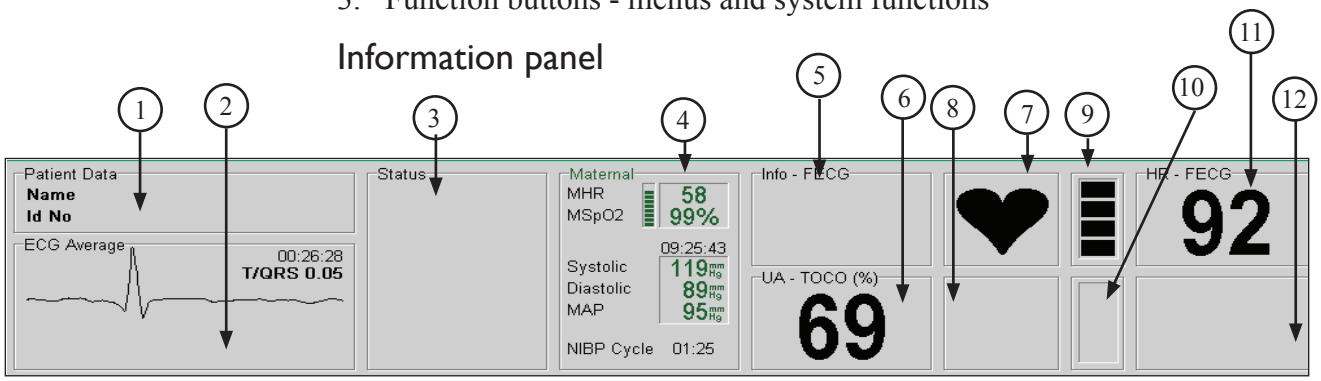


STAN S31 fetal heart monitor is available in several versions. Not all functions may be available on your monitor.

The display area is divided into three sections:

1. Information Panel - instantaneous data
2. Data presentation - trends, changes over time
3. Function buttons - menus and system functions

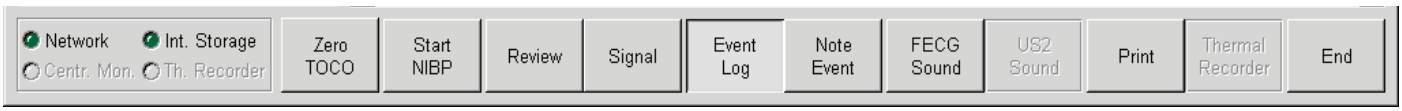
Information panel



1. Patient data
2. FECG average ST
3. Status window
4. Maternal window
5. FECG signal information
6. Maternal uterine activity
7. FECG/US1 heart beat
8. US2 heart beat
9. FECG/US1 signal quality
10. US2 signal quality
11. FECG/US1 heart rate
12. US2 heart rate

Function buttons

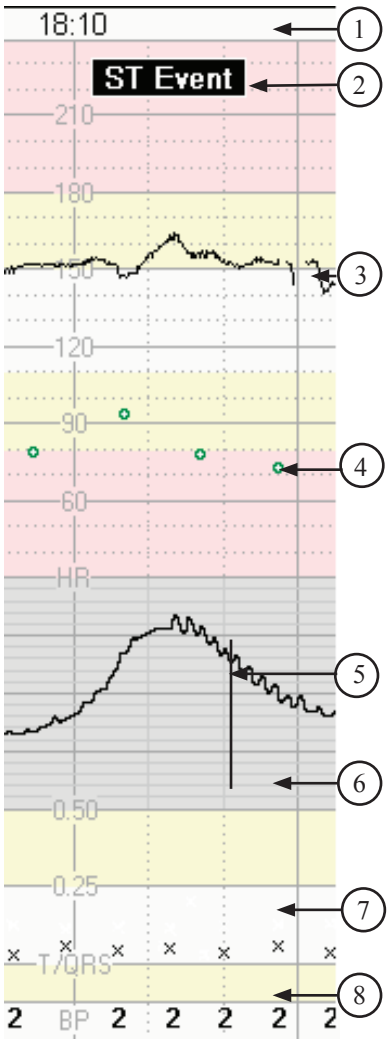
Function buttons are located at the bottom row of the display.
Depressed button indicates activated function.
Shaded (gray) button or text indicates that the function is not enabled.



Navigation

Operate the function buttons via the LCD touch screen.
Press the function button with a finger or a touchpen to activate function.
Press and hold the function button to open the pop-up menu.

Data Presentation



1. Time, date and connected transducers

2. ST Event

This symbol indicates a significant change in the fetal ECG waveform has occurred. You can find more information regarding this event in the Event Log. See STAN S31 User Manual for more information.

3. Fetal heart rate trace

When no transducer is connected or when HR is not detected or out of scale, no line will be drawn.

4. Maternal heart rate trace

Discontinuous or intermittent trace, presented as green rings, in order to differentiate from FHR trace. MHR is calculated from the SpO_2 measurements (in STAN S31 monitors with maternal monitor).

5. Event marker line (when Event marker button depressed)

6. Uterine activity trace

TOCO or IUP values are shown. When no transducer is connected, no line will be drawn.

7. T/QRS ratios

T/QRS ratios between - 0.125 and + 0.50 are drawn.

8. Biphasic (BP) indications

Calculated biphasic indications are displayed at the bottom end of the grid.

Event Log

The Event Log records information about various events. The Event Log is always active, even when hidden. When an ST Event, Fetal Heart Rate Event or Maternal Event occurs, the Event Log is automatically displayed.

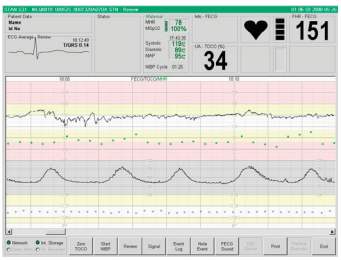
Event Log — Press the button to display or hide the Event Log.

Note Event — Press the button to enter an event using the keyboard. Press and hold to select a predefined event.

Use the arrows in the Event Log window to move up and down in the Event Log.

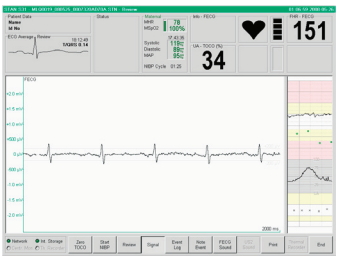
Important information might be missed when the event log is hidden.

Data Presentation Windows



Live EFM Window

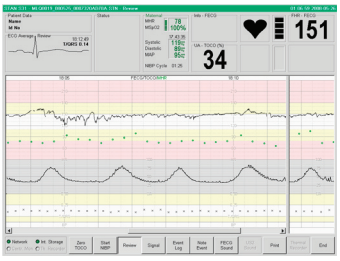
This is the window you normally use when monitoring.



FECG Signal Window

When monitoring with scalp electrode, use this window to inspect the fetal ECG signal. This window is always displayed after power ON until STAN S31 is recording with good signal quality.
In case of low or poor signal quality it may be necessary to apply a new scalp or skin electrode.
The current live recording is still visible in the right side window.

Signal — Press the button to display or hide the FECG Signal Window.



EFM Scroll Window

This window permits review of the ongoing recording.
The live recording is still visible in the right side window.

Review — Press the button to display or hide the EFM Scroll Window.

Move finger or touchpen across the scrollbar or across the recording to scroll through the recording.

Alarms

You may configure alarms on STAN S31. See STAN S31 User Manual for information on how to configure alarms.

Do not base patient monitoring solely on the alarm system. Absence of alarm triggering events does not imply the wellbeing of the mother or fetus. The alarms system does not replace personal surveillance and clinical assessment of your patient.

Alarm Conditions

The alarm triggering conditions are grouped into Clinical Conditions and Signal Loss Conditions. When alarms are enabled, they may be configured for either Clinical Conditions only, Signal Loss Conditions only, or both Clinical and Signal Loss Conditions. See STAN S31 User Manual for more information.

Alarm Signal

If alarms are enabled, the alarm signal may be visual or both audio and visual. When alarm is triggered, operator confirmation is required in order for the alarm signal to cease.

Visual alarm signal

Confirm Alarm

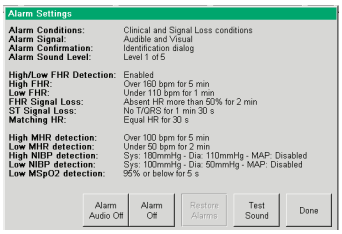
Press button to stop the visual alarm signal.

Audible alarm signal

Confirm Alarm

Press button to stop the audible alarm signal.

Inactivate/restore alarm signal


Alarm Settings
Alarm Conditions: Clinical and Signal Loss conditions
Alarm Signal: Audible and Visual
Alarm Confirmation: Identification dialog
Alarm Sound Level: Level 1 of 5
High/Low FHR Detection: Enabled
High FHR: Over 160 bpm for 5 min
Low FHR: Under 110 bpm for 1 min
FHR Signal Loss: Absent HR more than 50% for 2 min
ST Signal Loss: No T/QRS for 1 min 30 s
Matching HR: Equal HR for 30 s
High MHR detection: Over 100 bpm for 5 min
Low MHR detection: Under 50 bpm for 2 min
High NIBP detection: Sys: 180mmHg - Dia: 110mmHg - MAP: Disabled
Low NIBP detection: Sys: 100mmHg - Dia: 50mmHg - MAP: Disabled
Low MSpO2 detection: 95% or below for 5 s
Alarm Audio Off
Alarm Off
Restore Alarms
Test Sound
Done

Press and hold the Event Log button to access the Alarm Settings Overview.

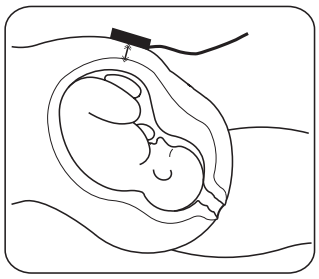
Press button Alarm Audio Off to silence alarm signal.
The visual alarm signal is still active.

Press button Alarm Off to inactivate alarm signal completely.
All alarm signals are now inactivated.

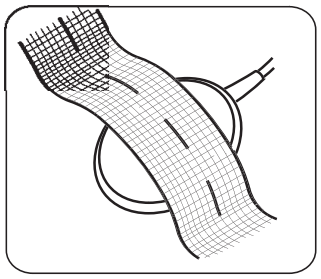
If the alarm signal is either silenced or inactivated,
press button Restore Alarms to revert to the initial alarm settings.

Recording of the uterine activity

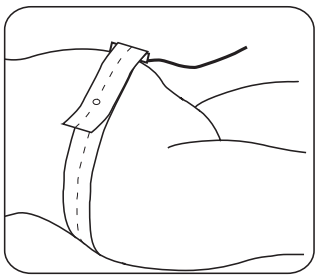
Set-up, External - TOCO



Place the transducer on the upper part of the maternal abdomen, over the fundus.



Fix the transducer in position using the abdominal belt, then connect to STAN S31.



Adjust the sensitivity by tightening or loosening the belt.

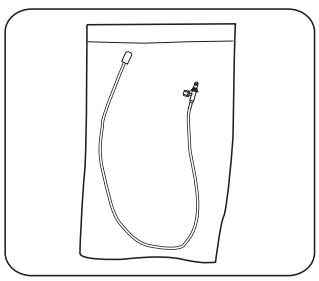
Zero TOCO

Press the button to set the TOCO value to default value 5. Press and hold button to select sensitivity.

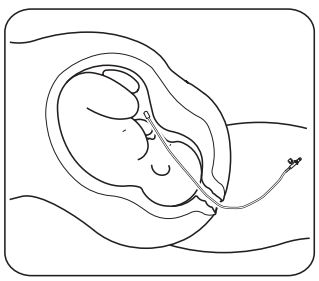
Set-up, Internal - IUP

Only use recommended cathethers and adapter cables. See STAN S31 User Manual.

Follow the application instructions included with the catheter and the IUP adapter cable.

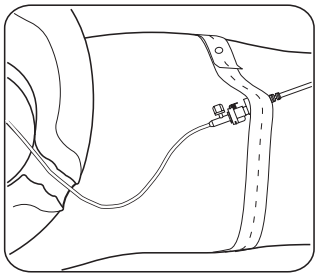


Use a sterile IUP catheter of recommended type.



Introduce the catheter.

Connect the IUP adapter cable to STAN S31



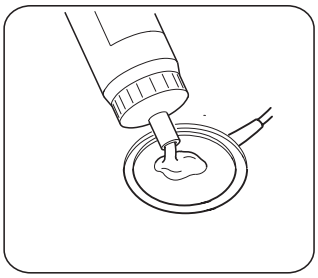
Press the Zero IUP menu button, to zero the IUP signal.
Connect the catheter to the IUP adapter cable.

Recording of the fetal heart rate

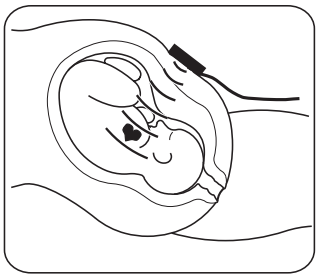
External Recording-Ultrasound

In external monitoring using ultrasound (US), no FECG is obtained and ST Analysis is not performed.

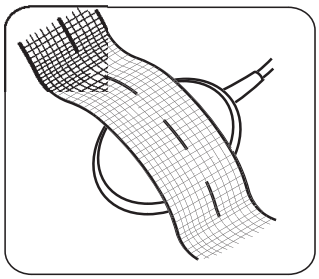
Reposition the transducer regularly as the fetus moves to improve signal quality.



Always use gel for ultrasound.



Direct the US transducer towards the fetal heart.



Fix the transducer by using the abdominal belt then connect to STAN S31.

US2 Sound

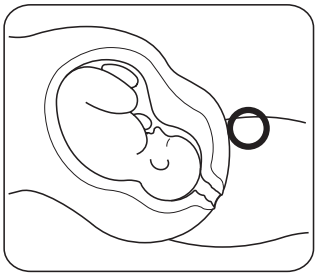
Press the button to switch US Sound on/off.
Press and hold to select sound volume.

Internal Recording-Fetal ECG (FECG)

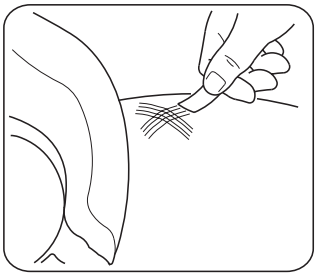
When monitoring with scalp electrode, the fetal ECG is recorded and ST Analysis is performed, if enabled on your monitor.

Only use recommended disposables and follow the instructions for use included with the disposable package.

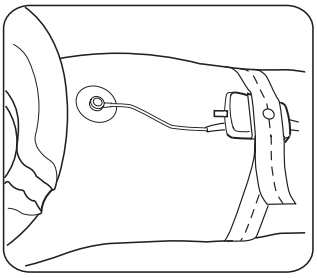
Read the STAN S31 User Manual on Signal Quality.



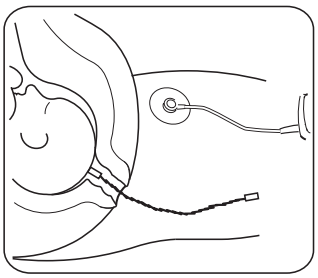
Locate the position for the skin electrode.



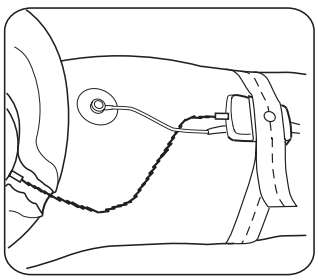
Prepare the skin properly by rubbing with abrasive device. Clean the area with alcohol. Let dry.



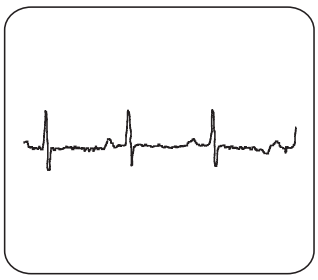
Connect the skin electrode to the legplate and apply to the prepared skin area.



Apply the recommended sterile scalp electrode.



Connect the scalp electrode to the legplate.



Connect the legplate to STAN S31 and inspect the FECG signal.

Signal

The fetal ECG will automatically be displayed in FECG Signal window until a stable signal has been achieved.

FECG Sound

Press the button to switch FECG Sound on/off.
Press and hold to select sound volume.

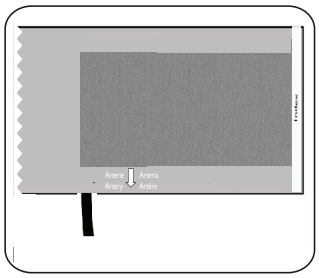
Monitoring the maternal vital signs-NIBP, $MSpO_2$ and MHR

STAN S31 monitor may be equipped with an integrated maternal module. The following maternal vital signs can be monitored directly with STAN S31: non-invasive blood pressure (NIBP), oxygen saturation ($MSpO_2$), and pulse/heart rate (MHR).
NIBP is measured with an NIBP cuff, and pulse oximetry with an SpO_2 sensor. MHR is derived directly from the $MSpO_2$ measurement.

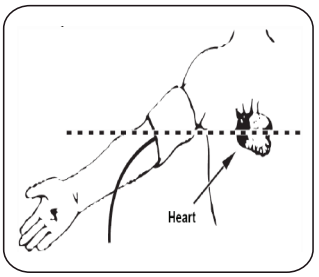
For more information see the STAN S31 User Manual.

Read and follow the NIBP cuff instructions for use.

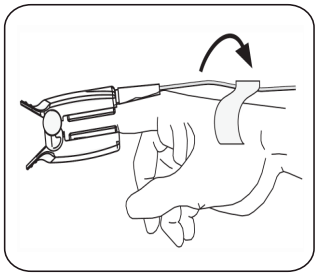
Read and follow the SpO_2 sensor instructions for use.



Select a cuff of appropriate size.Wrap the cuff snugly around the mother's bare arm. Center the arrow on the cuff directly over the brachial artery pointing towards the hand.



For optimum accuracy, the mother should keep the cuffed arm in extension, with the cuffed part placed at the same level as the heart, duringthe whole measurement.



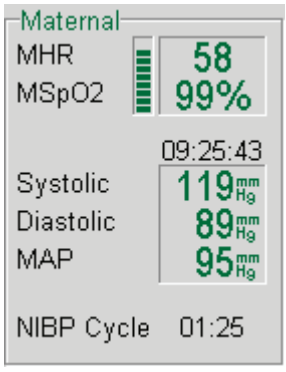
Apply the sensor on a suitable location (index finger is preferred). Ensure the light emitter is facing the nail, and the finger is inserted right to the end of the sensor.

Start NIBP

Press NIBP Start button on screen in order to start the measurement. Press and hold NIBP Start button on screen. Select the desired NIBP cycle in the pop-up menu. A measurement will start right away.

Stop NIBP

Press NIBP Stop button on screen in order to stop an ongoing measurement.

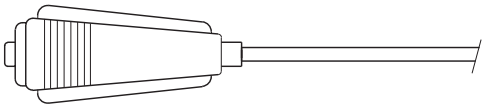


The values of the latest NIBP measurement are presented in the Maternal Window.

When the pulse oximetry sensor is correctly applied, the $MSpO_2$ value and MHR value are presented (and updated) continuously in the Maternal Window.

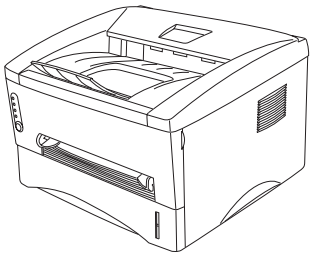
The Event marker

The Event marker is used to indicate fetal movements or other events. Each press results in a vertical line marker in the uterine activity curve.



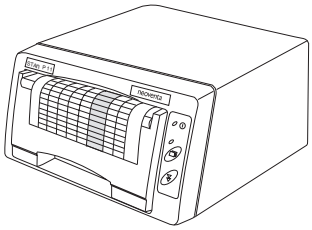
Printout

Different printer types can be connected to the system via network.
See STAN S31 Service Manual for compatible printer models.



Network Printer

Press the button to open Print dialog.



Thermal Recorder

Press the button to start/stop the recorder. Press and hold to select printing options.

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